AT A GLANCE

Optical coherent receiver in a compact 19”-chassis with 100 GHz bandwidth

Optional LO Laser for C- or L-Band included

Coherent detection of high-speed optical dual-polarization m-PAM and m-QAM signals

Applications
- 100 GHz Coherent optical receiver in a compact 19”-chassis
- 4 optical extender heads for direct connection to high-bandwidth oscilloscopes
- 1 mm (W) connector, ruggedized version on request
- Coherent receiver with integrated PBS, 4 BPD and optical 90° hybrid
- Coherent detection of high-speed optical QPSK and m-QAM signals
- Simultaneous polarization diverse coherent detection of I/Q
- Optical inputs for local oscillator and data signal
- C+L-band operating λ range

Technical Background
- Test and measurement up to 100 GHz
- Development of multi-Terabit transmission systems and components
- Polarization-diverse detection of highspeed signals with various modulation formats (m-PAM, m-QAM, 4D)
- Coherent receiver frontend for single-mode optical data transmission
- O/E converter for detection of arbitrary optical waveforms
- High-resolution optical spectrum-measurements
### CRF - 100 - EH

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating wavelength range (nm)</td>
<td>C-band / L-band (1520 – 1625)</td>
</tr>
<tr>
<td>3 dB cut-off frequency (GHz)</td>
<td>100</td>
</tr>
<tr>
<td>Average CRF responsivity (Sig mA/W)</td>
<td>&gt; 40</td>
</tr>
<tr>
<td>Common mode rejection ratio (dB)</td>
<td>&lt; -20 (DC)</td>
</tr>
<tr>
<td>Imbalance $I_{sig}$ and $I_{LO}$ (dB)</td>
<td>&lt; 2 (DC)</td>
</tr>
<tr>
<td>Phase deviation (deg)</td>
<td>&lt; +/- 8.0</td>
</tr>
<tr>
<td>Optical Return Loss (dB, @1550nm)</td>
<td>&gt; 35</td>
</tr>
<tr>
<td>Polarization extinction ratio for Sig &amp; LO (dB)</td>
<td>&gt; 20</td>
</tr>
<tr>
<td>Internal local oscillator laser</td>
<td>Optional</td>
</tr>
<tr>
<td>Optical extender head</td>
<td>Yes</td>
</tr>
<tr>
<td>Optical connectors</td>
<td>FC/LC/E2000-APC</td>
</tr>
<tr>
<td>HF-connectors</td>
<td>female W®</td>
</tr>
<tr>
<td>Dimensions (W x H x D in mm)</td>
<td>482 (19”) x 45 x 460</td>
</tr>
</tbody>
</table>

---

**200 GHz Detection Bandwidth**

**Joint Detection of 2.3 Tbps Superchannel**

**3 x 64-Gbd 64-QAM**

---

**Typical setup using the 100 GHz coherent receiver frontend**

---

**High-speed/m-QAM data signal**

---

**Analog-to-Digital Converters for real-time processing**

---

**Real-time Oscilloscope**

---

**Local Oscillator**

---

**Coherent Receiver Frontend**

---

**Electrical input**

---

**Optical in**